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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,401

10/01/2003

Martin C. Zieger

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12/16/2011

SAP/BSTZ

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EXAMINER

SHEIKH, ASFAND M

ART UNIT

PAPER NUMBER

3627

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/676,401	ZIEGER, MARTIN C.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ASFAND SHEIKH	3627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 1-6,8-11 and 34-37 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-6,8-11 and 34-37 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-302)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 10/31/2011 have been fully considered but they are not persuasive.

The applicant argues Benda, Cappellini, and Chowdhury do not teach or suggest all of the limitations of the claims; more specifically: Chowdhury's teaching of "detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping." The examiner respectfully disagrees.

The examiner notes the combination of Benda in view of Cappellini and Chowdhury does in fact teach the argued limitation noted above; more specifically: Chowdhury discloses detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping (see at least, col. 3, lines 34-37 and col. 12, lines 24-44 and col. 14, lines 19-24).

The examiner notes Chowdhury teaches the ability to **optimize sequences and configurations of items to be** picked, **packed**, and shipped (see at least, col. 3, lines 34-37). Chowdhury further teaches "Referring to FIG. 3, in the embodiment, three separate calculations are made. First, the **system calculates the minimum number of cases that may be used to pack the items on the item list based on the weight of the items on the item list** 90. In the embodiment shown, **this calculation** 90 **comprises dividing the total weight of the items on the item list based on a weight-based minimum case variable** 90. In the embodiment shown, **the weight-based minimum case variable comprises the total weight of the items in the list of**

**items to be packed divided by a weight constraint value. The weight constraint value comprises the maximum weight constraint of the available cases (i.e., the maximum weight of items that may be placed in the available case that may hold the most weight).** The maximum weight constraint is obtained by accessing the maximum weight constraint data discussed above in the cartonization constraints table. As discussed above, this maximum weight constraint may be determined by various factors, including strength and rating of the case and maximum shipping weight allowed by the delivery service employed to ship the case.” (see at least, col. 12, lines 22-44). Further Chowdhury teaches “Those of ordinary skill in the art will recognize that the discussion of placement into the case during the cartonization **process is a simulated, or calculated, placement**, rather than actual, physical placement of the items. The resulting simulated, or calculated, placement will provide direction for the actual, physical placement.” (see at least, col. 14, lines 19-24).

The examiner has interpreted “weight-based minimum case variable” and “weight constraint value” to be a given skipping range that will be “simulated” for “optimized sequences” and “configuration” of items to be packed. The examiner notes by performing “optimized sequences” and “configuration” of items to be packed there is inherently a form of detection based on the “weight-based minimum case variable” and “weight constraint value” (e.g. skipping range) during a given simulation. Therefore the examiner finds these arguments not persuasive.

***Official Notice***

The examiner notes the applicant's traversal of the Official Notice(s) taken with respect to claims 34-37, have been noted, however the traversal has been found to be inadequate. The examiner notes the applicant to adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111 (b). The examiner notes this is a *bona fide* attempt.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benda et al. (US 6,937,992 B1) in view of Cappellini (US 2003/0014286 A1) and Chowdhury et al. (US 6,876,958 B1).

Claims 1, 3, 5, 8, 9, and 10

Benda discloses comprising: receiving a demand order including a set of products to be shipped (see at least, abstract and col. 4, lines 28-39 and col. 5, lines 41-63).

Benda fails to disclose simulating a loading of a shipment of the set of products into a set of transports; evaluating a shipping rule including a constraint for the shipment during the simulating, the shipping rule permitted to be a complex logical statement; attempting to fill each transport in the set in simulating the loading of the shipment; and detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping.

Cappellini discloses disclose simulating a loading of a shipment of the set of products into a set of transports (see at least, [0182]); evaluating a shipping rule including a constraint for the shipment during the simulating, the shipping rule permitted to be a complex logical statement; (see at least, [0170] and [0188]); and attempting to fill each transport in the set in simulating the loading of the shipment (see at least, [0189]).

Further Cappellini discloses [claim 3] wherein the complex logical statement is defined by a user (see at least, [0189]: various rules defined by a user); [claim 5] further comprising: downsizing the shipment to match a maximum capacity of the transport (see at least, [0183] and [0189]); [claim 8 and 10] wherein simulating includes incrementing an amount of a first product in the shipment by one shipping unit (see at least, [0182]: the examiner notes the use of a mathematical model that would adjust as necessary to fit a given rule (e.g. add, subtract, etc); [claim 9] wherein the shipping unit is a pallet (see at least, [185]).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Benda to include simulating a loading of a shipment of the set of products

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into a set of transports; evaluating a shipping rule for the shipment, the shipping rule is permitted to be a complex logical statement; and attempting to fill each transport in the set in simulating the loading of the shipment as taught by Cappellini. One of ordinary skill in the art would have been motivated to combine the teachings in order to used for the sole simple use of determining the availability of space or capacity for a required transport vehicle (see at least, Cappellini, [0183]).

Benda in view of Cappellini fail to disclose detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping.

Chowdhury discloses evaluating... a constraint for the shipment... (see at least, col. 12, lines 24-44); detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping (see at least, col. 3, lines 34-37 and col. 12, lines 24-44 and col. 14, lines 19-24).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Benda in view of Cappellini to include detecting a skipping of a range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping as taught by Chowdhury. One of ordinary skill in the art would have been motivated to combine the teachings in order to provide optimized packaging of items to one or more bounded regions (see at least, Chowdhury, col. 1, lines 19-23).

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Claims 2

Benda discloses further comprising: simulating one of a balanced load and a straight load of the shipment in the transport (see at least, col. 5, lines 15-57: the examiner notes straight loading is used: one shipment then building on the one shipment with another shipment).

Claims 4

Benda discloses further comprising: upsizing the shipment to fill the transport (see at least, col. 5, lines 15-57: the examiner notes straight loading is used: one shipment then building on the one shipment with another shipment).

Claims 6

Benda discloses wherein the shipping rules include at least one constraint including one of a weight constraint, a volume constraint, and a product combination constraint (see at least, col. 5, lines 15-57: the examiner notes the use of a volume constraint to maximize a vehicle capacity).

Claims 11

Benda discloses further comprising: attempting to fill at least one transport, the at least one transport having multiple destinations (see at least, col. 5, lines 15-57: the examiner notes attempting to fill the transport via the use of multiple destinations).



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Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benda et al. (US 6,937,992 B1) in view of Cappellini (US 2003/0014286 A1) and Chowdhury et al. (US 6,876,958 B1) as applied to the respective claim(s) above, and further in view of Examiner's Official Notice.

Claim 34-37

Benda in view of Cappellini and Chowdhury fail to disclose wherein the range of the constraint is skipped when the loading of a shipping unit does not exceed a minimum bound of the constraint and adding another shipping unit exceeds the maximum bound of the constraint and wherein adjusting the simulating of the loading of the shipment in response to the skipping comprises: removing all shipping units from the simulating of the loading of the shipment after detecting the skipping; changing a last shipping unit of the set of products which lead to the skipping with a shipping unit of another set of products; and loading the remainder of the shipping units or storing a last load configuration that indicates the loading of a shipping unit that does not exceed the minimum bound of the constraint or, wherein adjusting the simulating of the loading of the shipment in response to the skipping comprises: backtracking the simulating of the loading of the shipment to the last load configuration; and changing a last shipping unit of the set of products which lead to the skipping with a shipping unit of another set of products.

The examiner takes Official Notice that it is old and well known in the computer simulation arts to have [Claim 34] minimum/maximum bound(s) for a simulation in which

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a minimum/maximum bound must be met and further [Claim 35 and 37] re-simulating from a given detected [Claim 36] simulation point (e.g. stored) that failed to meet the minimum/maximum bound(s) (e.g. backtracking).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Benda in view of Cappellini and Chowdhury to include the features as taught by the Examiner's Official Notice. One of ordinary skill in the art would have been motivated to combine the teachings in order to provide to ensure an optimized solution.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASFAND SHEIKH whose telephone number is (571)272-1466. The examiner can normally be reached on 9a-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ryan Zeender can be reached on (571)272-6790. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Asfand Sheikh/  
Primary Examiner, Art Unit 3627